



## DEPARTMENT OF TRANSPORTATION

### Federal Aviation Administration

#### 14 CFR Part 39

[Docket No. FAA-2023-0439; Project Identifier MCAI-2022-01263-T]

RIN 2120-AA64

#### Airworthiness Directives; Bombardier, Inc., Airplanes

**AGENCY:** Federal Aviation Administration (FAA), DOT.

**ACTION:** Notice of proposed rulemaking (NPRM).

**SUMMARY:** The FAA proposes to adopt a new airworthiness directive (AD) for certain Bombardier, Inc., Model BD-100-1A10 airplanes. This proposed AD was prompted by a report that a design deficiency was discovered which could allow a no-back pawl to be incorrectly installed in a horizontal stabilizer trim actuator (HSTA). This proposed AD would require a check for part number and serial numbers of the HSTA, and if necessary, inspection of the no-back pawl installation, and corrective action. This proposed AD would also prohibit the installation of affected parts. The FAA is proposing this AD to address the unsafe condition on these products.

**DATES:** The FAA must receive comments on this proposed AD by [INSERT DATE 45 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

**ADDRESSES:** You may send comments, using the procedures found in 14 CFR 11.43 and 11.45, by any of the following methods:

- Federal eRulemaking Portal: Go to [regulations.gov](https://www.regulations.gov). Follow the instructions for submitting comments.
- Fax: 202-493-2251.

- Mail: U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE, Washington, DC 20590.

- Hand Delivery: Deliver to Mail address above between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

*AD Docket:* You may examine the AD docket at [regulations.gov](https://www.regulations.gov) under Docket No. FAA-2023-0439; or in person at Docket Operations between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this NPRM, the mandatory continuing airworthiness information (MCAI), any comments received, and other information. The street address for Docket Operations is listed above.

*Material Incorporated by Reference:*

- For service information identified in this NPRM, contact Bombardier Business Aircraft Customer Response Center, 400 Côte-Vertu Road West, Dorval, Québec H4S 1Y9, Canada; telephone 514-855-2999; email [ac.yul@aero.bombardier.com](mailto:ac.yul@aero.bombardier.com); website [bombardier.com](https://www.bombardier.com).

- You may view this service information at the FAA, Airworthiness Products Section, Operational Safety Branch, 2200 South 216th St., Des Moines, WA. For information on the availability of this material at the FAA, call 206-231-3195.

**FOR FURTHER INFORMATION CONTACT:** Chirayu Gupta, Aerospace Engineer, Mechanical Systems and Administrative Services Section, FAA, New York ACO Branch, 1600 Stewart Avenue, Suite 410, Westbury, NY 11590; telephone 516-228-7300; email [9-avs-nyaco-cos@faa.gov](mailto:9-avs-nyaco-cos@faa.gov).

**SUPPLEMENTARY INFORMATION:**

**Comments Invited**

The FAA invites you to send any written relevant data, views, or arguments about this proposal. Send your comments to an address listed under ADDRESSES. Include

“Docket No. FAA-2023-0439; Project Identifier MCAI-2022-01263-T” at the beginning of your comments. The most helpful comments reference a specific portion of the proposal, explain the reason for any recommended change, and include supporting data. The FAA will consider all comments received by the closing date and may amend the proposal because of those comments.

Except for Confidential Business Information (CBI) as described in the following paragraph, and other information as described in 14 CFR 11.35, the FAA will post all comments received, without change, to regulations.gov, including any personal information you provide. The agency will also post a report summarizing each substantive verbal contact received about this NPRM.

#### **Confidential Business Information**

CBI is commercial or financial information that is both customarily and actually treated as private by its owner. Under the Freedom of Information Act (FOIA) (5 U.S.C. 552), CBI is exempt from public disclosure. If your comments responsive to this NPRM contain commercial or financial information that is customarily treated as private, that you actually treat as private, and that is relevant or responsive to this NPRM, it is important that you clearly designate the submitted comments as CBI. Please mark each page of your submission containing CBI as “PROPIN.” The FAA will treat such marked submissions as confidential under the FOIA, and they will not be placed in the public docket of this NPRM. Submissions containing CBI should be sent to Chirayu Gupta, Aerospace Engineer, Mechanical Systems and Administrative Services Section, FAA, New York ACO Branch, 1600 Stewart Avenue, Suite 410, Westbury, NY 11590; telephone 516-228-7300; email 9-avs-nyaco-cos@faa.gov. Any commentary that the FAA receives which is not specifically designated as CBI will be placed in the public docket for this rulemaking.

## **Background**

Transport Canada, which is the aviation authority for Canada, has issued Transport Canada AD CF-2022-55, dated September 21, 2022 (Transport Canada AD CF-2022-55) (also referred to after this as the MCAI), to correct an unsafe condition on certain Bombardier, Inc., Model BD-100-1A10 airplanes. The MCAI states that during an unscheduled inspection, a design deficiency was discovered which could allow a no-back pawl to be incorrectly installed in a HSTA. The no-back mechanism is a primary means to prevent back driving of the HSTA, and the motor brake assemblies (MBAs) are the secondary means. If this condition is not corrected, a non-functioning no-back mechanism in combination with loss of, or degraded HSTA MBA braking capability, could lead to a loss of control of the airplane. The MCAI also states that as a mitigating action, Transport Canada AD CF-2019-23, dated June 18, 2019, was issued to mandate a software upgrade for the horizontal stabilizer trim electronic control unit to verify the MBA for braking capability during the power up test on certain Bombardier, Inc., Model BD-100-1A10 airplanes. Transport Canada AD CF-2019-23 corresponds to FAA AD 2019-15-04, Amendment 39-19697 (84 FR 38862, August 8, 2019) (AD 2019-15-04).

The FAA is proposing this AD to address the unsafe condition on these products.

You may examine the MCAI in the AD docket at [regulations.gov](https://www.regulations.gov) under Docket No. FAA-2023-0439.

## **Related Service Information Under 1 CFR Part 51**

The FAA reviewed Bombardier Service Bulletins 100-27-20 and 350-27-009, both Revision 1, both dated December 1, 2020. This service information specifies procedures for a check for part number and serial numbers of the HSTA, and if necessary, inspection of the no-back pawl installation and corrective action. Corrective actions include replacement of the HSTA, and a re-identification and test of the HSTA. These documents are distinct since they apply to different airplane configurations.

This service information is reasonably available because the interested parties have access to it through their normal course of business or by the means identified in the ADDRESSES section.

#### **FAA's Determination**

This product has been approved by the aviation authority of another country, and is approved for operation in the United States. Pursuant to the FAA's bilateral agreement with this State of Design Authority, it has notified the FAA of the unsafe condition described in the MCAI and service information described above. The FAA is issuing this NPRM after determining that the unsafe condition described previously is likely to exist or develop on other products of the same type design.

#### **Proposed AD Requirements in this NPRM**

This proposed AD would require accomplishing the actions specified in the service information already described. This proposed AD would also prohibit the installation of affected parts.

Regarding the corrective action for certain HSTAs, as specified in Bombardier Service Bulletins 100-27-20 and 350-27-009, both Revision 1, both dated December 1, 2020, rework of the HSTA is required by the manufacturer, since this manufacturer is the only producer of the affected part.

#### **Costs of Compliance**

The FAA estimates that this AD, if adopted as proposed, would affect 703 airplanes of U.S. registry. The FAA estimates the following costs to comply with this proposed AD:

<b>Estimated costs for required actions</b>			
<b>Labor cost</b>	<b>Parts cost</b>	<b>Cost per product</b>	<b>Cost on U.S. operators</b>
Up to 2 work-hours X \$85 per hour = \$170	None	Up to \$170	\$119,510

The FAA estimates the following costs to do any necessary on-condition actions that would be required based on the results of any required actions. The FAA has no way of determining the number of aircraft that might need these on-condition actions:

**Estimated costs of on-condition actions**

<b>Labor cost</b>	<b>Parts cost</b>	<b>Cost per product</b>
Up to 25 work-hours X \$85 per hour = \$2,125	\$2,905	Up to \$5,030

According to the manufacturer, some or all of the costs of this proposed AD may be covered under warranty, thereby reducing the cost impact on affected individuals. The FAA does not control warranty coverage for affected individuals. As a result, the FAA has included all known costs in the cost estimate.

**Authority for this Rulemaking**

Title 49 of the United States Code specifies the FAA's authority to issue rules on aviation safety. Subtitle I, section 106, describes the authority of the FAA Administrator. Subtitle VII: Aviation Programs, describes in more detail the scope of the Agency's authority.

The FAA is issuing this rulemaking under the authority described in Subtitle VII, Part A, Subpart III, Section 44701: General requirements. Under that section, Congress charges the FAA with promoting safe flight of civil aircraft in air commerce by prescribing regulations for practices, methods, and procedures the Administrator finds necessary for safety in air commerce. This regulation is within the scope of that authority because it addresses an unsafe condition that is likely to exist or develop on products identified in this rulemaking action.

**Regulatory Findings**

The FAA determined that this proposed AD would not have federalism implications under Executive Order 13132. This proposed AD would not have a

substantial direct effect on the States, on the relationship between the national Government and the States, or on the distribution of power and responsibilities among the various levels of government.

For the reasons discussed above, I certify this proposed regulation:

(1) Is not a “significant regulatory action” under Executive Order 12866,

(2) Would not affect intrastate aviation in Alaska, and

(3) Would not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

#### **List of Subjects in 14 CFR Part 39**

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

#### **The Proposed Amendment**

Accordingly, under the authority delegated to me by the Administrator, the FAA proposes to amend 14 CFR part 39 as follows:

#### **PART 39 - AIRWORTHINESS DIRECTIVES**

1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

#### **§ 39.13 [Amended]**

2. The FAA amends § 39.13 by adding the following new airworthiness directive:

**Bombardier, Inc.:** Docket No. FAA-2023-0439; Project Identifier

MCAI-2022-01263-T.

#### **(a) Comments Due Date**

The FAA must receive comments on this airworthiness directive (AD) by  
[INSERT DATE 45 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL  
REGISTER].

#### **(b) Affected ADs**

None.

**(c) Applicability**

This AD applies to Bombardier, Inc., Model BD-100-1A10 airplanes, certificated in any category, having serial number 20003 and subsequent.

**(d) Subject**

Air Transport Association (ATA) of America Code 27, Flight Controls.

**(e) Unsafe Condition**

This AD was prompted by a report that a design deficiency was discovered which could allow a no-back pawl to be incorrectly installed in a horizontal stabilizer trim actuator (HSTA). The FAA is issuing this AD to address incorrectly installed no-back pawls. The unsafe condition, if not addressed, could result in a non-functioning no-back mechanism, which, in combination with loss of or degraded HSTA motor brake assembly (MBA) braking capability, could lead to a loss of control of the airplane.

**(f) Compliance**

Comply with this AD within the compliance times specified, unless already done.

**(g) Records Check and Corrective Actions**

Within 60 months after the effective date of this AD, check the airplane maintenance records or do a visual check to determine the part and serial numbers of the HSTA.

(1) If the part number is C47100-005: No further action is required by this paragraph.

(2) If the part number is C47100-004 and the serial number ends with the suffix – K: No further action is required by this paragraph.

(3) If the serial number is listed in the table referred to in paragraph 2.B.(4) of the Accomplishment Instructions of the applicable Bombardier service bulletin identified in figure 1 to paragraph (g)(3) of this AD: Within 60 months from the effective date of this AD, inspect the HSTA no-back mechanism pawls in accordance with paragraph 2.C. of



the Accomplishment Instructions of the applicable service bulletin identified in figure 1 to paragraph (g)(3) of this AD.

**Figure 1 to paragraph (g)(3) – Applicable service information**

<b>Airplane Model</b>	<b>Applicable Bombardier Service Bulletin</b>
BD-100-1A10 (CH300 marketing)	100-27-20, Revision 1, dated December 1, 2020
BD-100-1A10 (CH 350 marketing)	350-27-009, Revision 1, dated December 1, 2020

(i) If one or more pawls are not correctly installed: Before further flight, replace the HSTA in accordance with paragraph 2.E. of the Accomplishment Instructions of the applicable service bulletin identified in figure 1 to paragraph (g)(3) of this AD.

(ii) If all the pawls are correctly installed, re-identify and test the HSTA, and do all applicable corrective actions, in accordance with paragraphs 2.C.(4) and 2.F. of the Accomplishment Instructions of the applicable service bulletin identified in figure 1 to paragraph (g)(3) of this AD.

(4) If the serial number is listed in the table referred to in paragraph 2.B.(5) of the Accomplishment Instructions of the applicable service bulletin identified in figure 1 to paragraph (g)(3) of this AD: Within 60 months from the effective date of this AD, add a modification plate to the HSTA in accordance with paragraph 2.D. of the Accomplishment Instructions of the applicable service bulletin identified in figure 1 to paragraph (g)(3) of this AD.

(5) If the records check is inconclusive, or if a visual check instead of a records check of the HSTA was accomplished: Within 60 months from the effective date of this AD, verify the part and serial numbers of the HSTA, and verify the modification plate, in accordance with paragraph 2.B. of the Accomplishment Instructions of the applicable service bulletin identified in figure 1 to paragraph (g)(3) of this AD.

(i) If the HSTA has P/N C47100-005: No further action is required by this paragraph.

(ii) If the HSTA has P/N C47100-004 and a serial number that ends with the suffix -K, or if the modification plate contains “SB C47100-27-02” or “SB C47100-27-03”: No further action is required by this paragraph.

(iii) If the serial number is listed in the table referred to in paragraph 2.B.(4) of the Accomplishment Instructions of the applicable service bulletin identified in figure 1 to paragraph (g)(3) of this AD: Within 60 months from the effective date of this AD, inspect the HSTA no-back mechanism pawls in accordance with paragraph 2.C. of the Accomplishment Instructions of the applicable service bulletin identified in figure 1 to paragraph (g)(3) of this AD.

(A) If one or more pawls are not correctly installed, before further flight, before further flight, replace the HSTA in accordance with Paragraph 2.E. of the Accomplishment Instructions of the applicable service bulletin identified in figure 1 to paragraph (g)(3) of this AD.

(B) If all the pawls are correctly installed, re-identify and test the HSTA, and do all applicable corrective actions, in accordance with paragraphs 2.C.(4) and 2.F. of the Accomplishment Instructions of the applicable service bulletin identified in figure 1 to paragraph (g)(3) of this AD.

(iv) If the serial number is listed in the table referred to in paragraph 2.B.(5) of the Accomplishment Instructions of the applicable service bulletin identified in figure 1 to paragraph (g)(3) of this AD: Within 60 months from the effective date of this AD, add a modification plate to the HSTA in accordance with paragraph 2.D. of the Accomplishment Instructions of the applicable service bulletin identified in figure 1 to paragraph (g)(3) of this AD.

**(h) Parts Installation Prohibition**

As of the effective date of this AD, no person may install a part identified in paragraph (h)(1) or (2) of this AD.

(1) An HSTA with P/N C47100-003 or P/N C47100-004 that does not have the suffix -K following the serial number.

(2) An HSTA with a modification plate showing “SB C47100-27-02” or “SB C47100-27-03.”

**(i) Credit for Previous Actions**

This paragraph provides credit for actions required by paragraph (g) of this AD, if those actions were performed before the effective date of this AD using the applicable service information identified in paragraphs (i)(1) and (2) of this AD.

(1) Bombardier Service Bulletin 100-27-20, dated November 9, 2020.

(2) Bombardier Service Bulletin 350-27-009, dated November 9, 2020.

**(j) Additional AD Provisions**

The following provisions also apply to this AD:

(1) *Alternative Methods of Compliance (AMOCs)*: The Manager, New York ACO Branch, FAA, has the authority to approve AMOCs for this AD, if requested using the procedures found in 14 CFR 39.19. In accordance with 14 CFR 39.19, send your request to your principal inspector or responsible Flight Standards Office, as appropriate. If sending information directly to the manager of the New York ACO Branch, mail it to ATTN: Program Manager, Continuing Operational Safety, at the address identified in paragraph (k)(2) of this AD or email to: 9-avs-nyaco-cos@faa.gov. If mailing information, also submit information by email. Before using any approved AMOC, notify your appropriate principal inspector, or lacking a principal inspector, the manager of the responsible Flight Standards Office.

(2) *Contacting the Manufacturer*: For any requirement in this AD to obtain instructions from a manufacturer, the instructions must be accomplished using a method approved by the Manager, New York ACO Branch, FAA; or Transport Canada or

Bombardier, Inc.'s Transport Canada Design Approval Organization (DAO). If approved by the DAO, the approval must include the DAO-authorized signature.

**(k) Additional Information**

(1) Refer to Transport Canada AD CF-2022-55, dated September 21, 2022, for related information. This Transport Canada AD may be found in the AD docket at [regulations.gov](https://www.regulations.gov) under Docket No. FAA-2023-0439.

(2) For more information about this AD, contact Chirayu Gupta, Aerospace Engineer, Mechanical Systems and Administrative Services Section, FAA, New York ACO Branch, 1600 Stewart Avenue, Suite 410, Westbury, NY 11590; telephone 516-228-7300; email [9-avs-nyaco-cos@faa.gov](mailto:9-avs-nyaco-cos@faa.gov).

(3) Service information identified in this AD that is not incorporated by reference is available at the addresses specified in paragraphs (1)(3) and (4) of this AD.

**(l) Material Incorporated by Reference**

(1) The Director of the Federal Register approved the incorporation by reference (IBR) of the service information listed in this paragraph under 5 U.S.C. 552(a) and 1 CFR part 51.

(2) You must use this service information as applicable to do the actions required by this AD, unless this AD specifies otherwise.

(i) Bombardier Service Bulletin 100-27-20, Revision 01, dated December 1, 2020.

(ii) Bombardier Service Bulletin 350-27-009, Revision 01, dated December 1, 2020.

(3) For service information identified in this AD, contact Bombardier Business Aircraft Customer Response Center, 400 Côte-Vertu Road West, Dorval, Québec H4S 1Y9, Canada; telephone 514-855-2999; email [ac.yul@aero.bombardier.com](mailto:ac.yul@aero.bombardier.com); website [bombardier.com](https://www.bombardier.com).

(4) You may view this service information at the FAA, Airworthiness Products Section, Operational Safety Branch, 2200 South 216th St., Des Moines, WA. For information on the availability of this material at the FAA, call 206-231-3195.

(5) You may view this service information that is incorporated by reference at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, email [fr.inspection@nara.gov](mailto:fr.inspection@nara.gov), or go to: [www.archives.gov/federal-register/cfr/ibr-locations.html](http://www.archives.gov/federal-register/cfr/ibr-locations.html).

Issued on March 17, 2023.

Christina Underwood, Acting Director,  
Compliance & Airworthiness Division,  
Aircraft Certification Service.

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